

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An IC element formed integrally with a coil as a composite for performing contactless data communication with external equipment, comprising:

a conductor constituting said coil having a plurality of ~~adjacent~~ directly contacting conductive layers including a metal-sputtered layer or alternatively a metal-evaporated-layer and a metal-plated layer.

2. (Previously Presented) The IC element as set forth in claim 1, wherein said metal-sputtered layer or alternatively said metal-evaporated layer is formed of at least one metal of aluminum, nickel, copper and chromium or alternatively an alloy containing those metals, and said metal-plated layer deposited on said metal-sputtered layer or alternatively said metal-evaporated layer is formed of copper.

3. (Previously Presented) The IC element as set forth in claim 1, wherein said coil is formed on a surface of said IC element formed with input/output terminals with

interposition of an electrically insulative surface passivation film and the input/output terminals of said IC element and said coil are electrically interconnected through through-holes formed in said surface passivation film and each having a diameter smaller than a line width of said coil.

4. (Previously Presented) The IC element as set forth in claim 1, wherein said coil is implemented in a rectangular spiral pattern in a planar shape and all or some of corner portions of said rectangular spiral pattern are chamfered.

5. (Previously Presented) The IC element as set forth in claim 1, wherein said metal-plated layer is formed by resorting to an electroless plating method or alternatively an electroplating method or alternatively a precision electroforming method.

6. (Previously Presented) The IC element as set forth in claim 1, wherein a line width of said coil is not smaller than 7 μm , an inter-line distance thereof is not greater than 5 μm and the number of turns thereof is not smaller than 20 turns.

7-8. (Cancelled)

9. (Withdrawn) An information carrier comprising:

a substrate having an IC element mounted thereon,
said IC element formed integrally with an antenna coil as a composite for performing data communication in a contactless manner with external equipment,
said IC element and said antenna coil being disposed at a center portion of a plane of said substrate.

10. (Withdrawn) The information carrier as set forth in claim 9, wherein both of top and bottom surfaces of said IC element are covered with said substrate.

11. (Withdrawn) The information carrier as set forth in claim 9, wherein only one surface of said IC element is covered with said substrate.

12. (Withdrawn) The information carrier as set forth in claim 9, wherein said substrate is formed in a circular or square planar shape.

13. (Withdrawn) The information carrier as set forth in claim 9, wherein said substrate is wholly or partially formed of paper.

14. (Withdrawn) The information carrier as set forth in claim 9, wherein said substrate has three layers bonded together including a top member, a bottom member and

an intermediate member, and said IC element is accommodated within a through-hole formed in said intermediate member at a mid portion thereof.

15. (Withdrawn) The information carrier as set forth in claim 14, wherein said through-hole is a circle in said plane of said substrate.

16. (Withdrawn) The information carrier as set forth in claim 9, wherein said substrate has two layers bonded together including a top member and a bottom member, and said IC element is accommodated within a recess formed in said top member or alternatively in said bottom member at a mid portion thereof.

17. (Withdrawn) The information carrier as set forth in claim 9, wherein said substrate has a single layer, and said IC element is accommodated within a recess formed in said substrate at a mid portion thereof.

18. (Withdrawn) The information carrier as set forth in claim 16, wherein said recess is a circle in said plane of said substrate.

19. (Withdrawn) The information carrier as set forth in claim 9, further comprising another discrete coil which is separately formed independent of said IC element internally

of said substrate.

20-27. (Cancelled)

28. (Previously Presented) The IC element as set forth in claim 1, wherein a resistance of said metal-plated layer is less than a resistance of said metal-sputtered layer or said metal-evaporated layer.

29. (Previously Presented) The IC element as set forth in claim 1, wherein the entirety of said coil is formed on a surface of said IC element.

30. (Withdrawn) The information carrier as set forth in claim 9, wherein the entirety of said coil is formed on a surface of said IC element.

31. (Withdrawn) The information carrier is set forth in claim 9, wherein the antenna coil includes a conductor having a plurality of adjacent conductive layers.